

Application Number 10/790,965
Amendment responsive to Office Action mailed February 15, 2008

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REMARKS

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This Amendment is responsive to the Office Action dated February 15, 2008. Applicants have amended claim 42 consistent with discussions with the Examiner on February 11, 2008. Applicants have also added new claims 47-52. Claims 30-35 and 42-52 are now pending.

Rejections based on Kerfeld and Sandstrom

In the Office Action, the Examiner rejected claims 30-32, 35, 42, and 45-46 under 35 U.S.C. 103(a) as being unpatentable over Kerfeld (US 6,190,838) in view of Sandstrom (US 6,382,955). The Examiner also rejected claims 33-34 and 43-44 under 35 U.S.C. 103(a) as being unpatentable over Kerfeld in view of Sandstrom and further in view of Sasaki (US 5,325,353).

Neither Kerfeld nor Sandstrom is prior art to the current Application. For this reason, all rejections that rely on these references are improper.

The current Application has a priority date of April 6, 1998. All of the claimed subject matter of the pending claims is fully supported by priority document 09/055,825, which bears the filing date of April 6, 1998.

Kerfeld has a filing date of April 6, 1998 and is therefore, not prior art to the current application. Furthermore, the entire content of Kerfeld was incorporated by reference into the current application at the initial filing. Kerfeld is not prior art to the current application.

Sandstrom has a filing date of September 27, 1999. Therefore, Sandstrom is not prior art to the current application insofar as the current application has a priority date that is earlier than the filing date of Sandstrom.

All of the rejections based on Kerfeld or Sandstrom must be withdrawn.

Rejections based on Suzuki

In the Office Action, the Examiner rejected claims 42-46 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Suzuki (US 4,947,384). The Examiner also rejected claims 30-35 under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Sasaki et al. (US 5,325,353).

Application Number 10/790,965
Amendment responsive to Office Action mailed February 15, 2008

In these rejections, the Examiner has continued to rely on a clear typographical error in Suzuki, and has failed to demonstrate that Suzuki actually enables a track pitch of 1.6 microinch and groove dimensions of 0.8 microinch, which the Examiner relies upon to reject the track pitch and groove dimension features of Applicants' claims. The Examiner's position is incorrect.

Suzuki and its priority document JP 62-90081 are in agreement with regard to all of the commonly available information, with the exception that JP 62-90081 expresses the track pitch as 1.6 micrometers and groove dimension of 0.8 micrometers. Track pitch of 1.6 micrometers and groove dimensions of 0.8 micrometers are consistent with conventional dimensions of the filing period of Suzuki, while 1.6 microinch track pitch and groove dimensions of 0.8 microinch are far smaller than any conventional optical recording processes were capable of at the priority date and filing date of Suzuki.

The relied upon passages of Suzuki merely describe the standard mastering processes of focused scanning laser beam exposure using single layer photoresist. This was conventional and commonly practiced for the 1.6 micrometer track pitch and 0.8 micrometer groove dimension described in priority JP 62-90081. Suzuki refers to the conventional nature of this background teaching frequently in the background section, and then describes the invention of Suzuki in Summary and Detail Description sections. The description of Suzuki describes "the spot diameter of the laser beam for read-out is ordinarily within the width of the land portion" (col.1, line 50-54) and also describes tracing singular land portions using said laser spot (col.1, lines 39,40) and laser beam actuated to trace out singular land portion (col.1, line 45).

Clearly, one of ordinary skill in the art would recognize that all of these descriptions are unattainable for track pitches that are much smaller than the focal spot size of the laser beam.

The present application, in contrast, describes the optical physics limitation of a focused laser spot size as depending on wavelength and lens numerical aperture, with limitations of 220 nm even for UV light (350nm wavelength) and highest Numerical Aperture (NA=0.92). Suzuki does not enable any 40nm laser spot size that would be required to attain track pitch dimensions of 1.6 microinch and groove dimension of 0.8 microinch. The mis-translated dimensions of 1.6 microinch track pitch and of 0.8 microinch groove dimensions are not enabled.

As further evidence that the teaching of Suzuki is descriptive of conventional track pitches at 1.6 micrometer and conventional groove dimensions of 0.8 micrometer (rather than

Application Number 10/790,965

Amendment responsive to Office Action mailed February 15, 2008

microinches), Applicants note that Suzuki describes the optical push-pull tracking method in col. 1, lines 60-65, as justification for the dimensions cited by the Examiner. The push-pull method, as it is commonly called, relies on the optical diffraction of the incident focused laser light into +/- 1st order diffraction beams, which interfere with the zero order reflected beam to create a trackable signal from a split tracking detector. If Suzuki actually contemplated a 40nm track pitch, then no optical diffraction would occur since the diffraction grating would be significantly less than the incident wavelength (hence resulting in no push-pull tracking signal). Furthermore, Suzuki's teaching does not enable any way to obtain an optical diffraction pattern from a pattern of sub-optically diffracting pitch (i.e. 40nm), but instead presumes conventional tracking means, which is consistent with the 1.6 micrometer pitch of priority document JP 62-90081.

In addition, Suzuki teaches a laser beam focused on a photoresist layer for the mastering step (see col. 2, line 4-6), but does not provide any enabling disclosure that describes how to provide a 40nm dimension laser spot size (which is actually below the limits of optical physics at ~220nm).

In short, Suzuki describes conventional processes from the time frame of the filing of Suzuki (e.g., 1987-1988), and fails to address any of the challenges of translating 1.6 micrometer track pitches to 1.6 microinches (i.e., approximately 40nm) track pitches. On the contrary, Suzuki teaches conventional processes from the time frame of 1987-1988, consistent with the dimensions cited in priority document JP 62-90081. Suzuki simply fails to disclose any way to attain track pitches anywhere near 1.6 microinches, or groove dimensions anywhere near 0.8 microinch.

In the current Office Action, the Examiner stated that the arguments above are not persuasive because the rejection of claims is based on the US reference, not the foreign reference, wherein the US reference discloses all claimed structural limitations with the dimensions of microinches. Applicants disagree, and respectfully submit that the Examiner is not addressing the issue.

Whether Suzuki mentions dimensions (i.e., in microinches) is not the issue. The issue is whether Suzuki *enables* a person of ordinary skill in the art to achieve such dimensions. For example, if Suzuki were to have mentioned the concept of time travel, this type of statement

Application Number 10/790,965
Amendment responsive to Office Action mailed February 15, 2008

would not prove that Suzuki actually enabled the creation of a time machine that facilitates such time travel.

In the instant case, Applicants have not only demonstrated that the teaching of Suzuki is inadequate to enable a person of ordinary skill in the art to achieve the cited dimensions (in microinches), but have further demonstrated that the entire discussion of microinches in Suzuki is clearly a typographical translation error relative to the Japanese priority document of Suzuki. A person of ordinary skill would interpret such typographical translation errors in Suzuki as suggesting track pitches at 1.6 micrometers, not 1.6 microinches.

Furthermore, Suzuki simply fails to disclose any way to attain track pitches anywhere near 1.6 microinches, or groove dimensions anywhere near 0.8 microinch. The Examiner's position is analogous to an argument that the mere mention of time travel is an enabling disclosure sufficient to anticipate a real time machine.

Applicants respectfully submit that a non-enabling disclosure of dimensions that are clearly the result of a translation error is *per se* insufficient to support a rejection under 35 U.S.C. 102 or 35 U.S.C. 103. The rejections based on Suzuki must be withdrawn.

New claims 47-52

New claims 47-52 correspond to the subject matter of previous claims 36-41. Previous claims 36-41 were canceled solely for the purpose of expediting the present case to issuance. Previous claims 36-41 were rejected as being anticipated and/or obvious in view of Suzuki.

The arguments above with regard to Suzuki are applicable to claims 47-52. Suzuki lacks any enabling disclosure of a track pitch less than 425 nanometers and a width of groove bottoms greater than 25 percent of the track pitch, as required by claims 47-52. Suzuki enables track pitches at 1.6 micrometers and groove dimension at 0.8 micrometers, not track pitches of 1.6 microinches or groove dimensions of 0.8 microinch.

In addition to this, Applicants also note that former claim 36 (current claim 47) specifically recites stamper grooves that extend down into the stamper surface, wherein the stamper grooves define stamper groove bottoms that have a width that is greater than 25 percent of the track pitch. Former claim 40 (current claim 51) defines stamper groove bottoms that have a width that is greater than 50 percent of the track pitch.

Application Number 10/790,965
Amendment responsive to Office Action mailed February 15, 2008

In addressing these stamper groove bottom width features of claims 36 and 40, the Examiner had relied upon the discussion of "groove dimensions" discussed in Suzuki. Groove dimensions, per Suzuki, however, appear to refer to the average width of the grooves, and not the width of groove bottoms. Conventional groove bottoms are much narrower than the "groove dimensions" defined by Suzuki. Accordingly, Applicants submit that the Examiner has not shown the claim limitation of former claim 36 (current claim 47) that requires groove bottoms that have a width that is greater than 25 percent of the track pitch are suggested by Suzuki. With regard to former claim 40 (current claim 51), it should be very apparent that the "groove dimensions" discussed in Suzuki (e.g., near 50 percent of the track pitch) would not define groove bottom widths that are even close to 50 percent of the track pitch.

On this point, the Examiner specifically relied upon column 2, lines 10-17, of Suzuki. While this passage indicates that groove bottoms may "reach the original plate," it does not indicate that the dimensions discussed in Suzuki are groove bottom dimensions. On the contrary, when discussing sizes, Suzuki appears to refer to the average width of the grooves, and not the width of groove bottoms. The Examiner has still failed to meet his burden of proof on this issue. Indeed, the cited passage column 2, lines 10-17 specifically states that the bottom can have a "round-ish periphery," which further supports Applicants' position on this issue (that dimensions discussed in Suzuki refer to average groove widths, and not the widths of groove bottoms).

Claims 42-46

In addition to the foregoing arguments, Applicants also wish to comment on the Examiner's statements regarding claims 42-46. In particular, Applicants strongly disagree with the Examiner's statement that claims 42-46 recite method steps. The features of claims 42-46 are structural.

Indeed, Applicants have already made these arguments, and the current rejections were previously withdrawn. It is unclear why the Examiner is changing his position back and forth in the successive Office Actions.

With regard to claim 42, the Examiner previously stated that the limitation "track pitch less than 2 multiplied by a laser spot size associated with a laser used to perform laser etching" is a method step. Applicants disagreed, and convinced the Examiner otherwise. However, the

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Application Number 10/790,965

Amendment responsive to Office Action mailed February 15, 2008

MAY 01 2008

Examiner appears to be restating this same argument, which Applicants have already overcome in a previous Response.

The features of claim 42 recite structural limitations of the media, i.e., a structural limitation of the track pitch. In this case, the track pitch is simply defined relative to a laser spot size associated with a laser used to perform a mastering process. Accordingly, this feature specifically quantifies the size of the track pitch in a relative manner, i.e., relative to a laser spot size associated with a laser used to perform the mastering process. Nothing in Suzuki discloses or suggests a track pitch less than 2 multiplied by a laser spot size associated with a laser used to perform the mastering process, and this feature is not a method step.

CONCLUSION

All claims in this application are in condition for allowance. Applicants respectfully request reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 09-0069. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Date:

By:

5/1/08

Imation Legal Affairs
P.O. Box 64898
St. Paul, Minnesota 55164-0898
Telephone: (651) 704-3604
Facsimile: (651) 704-5951


Eric D. Levinson
Name: Eric D. Levinson
Reg. No.: 35,814